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You can read the recommendations in the user guide, the technical guide or the installation guide for FRIGIDAIRE ELECTRIC RANGE WITH ES 1000. You'll find the answers to all your questions on the FRIGIDAIRE ELECTRIC RANGE WITH ES 1000 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual FRIGIDAIRE ELECTRIC RANGE WITH ES 1000 User guide FRIGIDAIRE ELECTRIC RANGE WITH ES 1000 Operating instructions FRIGIDAIRE ELECTRIC RANGE WITH ES 1000 Instructions for use FRIGIDAIRE ELECTRIC RANGE WITH ES 1000 Instruction manual FRIGIDAIRE ELECTRIC RANGE WITH ES 1000

SERVICE DATA SHEET - Electric Range with ES 1000 Electronic Oven Control

NOTICE: This service data sheet is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. The manufacturer cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.

Safe servicing practices
To avoid the possibility of personal injury and/or property damage, it is important that safe servicing practices be observed. The following are examples, but without limitation, of such practices:

- Before servicing or moving an appliance remove power cord from electrical outlet. Trip circuit breaker to OFF, or remove fuse.
- Never insert with the proper installation of any safety device.
- GROUNDING:** The standard color coding for safety ground wires is GREEN or GREEN WITH YELLOW STRIPES. Ground leads are not to be used as current-carrying conductors. It is extremely important that the service technician reestablish all safety grounds prior to completion of service. Failure to do so will create a potential safety hazard.
- Prior to returning the product to service, ensure that:
 - All electric connections are correct and secure.
 - All electrical leads are properly dressed and secured away from sharp edges, high-temperature components, and moving parts.

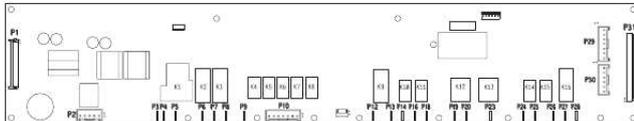
- All uninsulated electrical terminals, connectors, heaters, etc. are adequately spaced away from all metal parts and panels.
- All safety grounds (both internal and external) are correctly and securely reestablished.

Oven Calibration
Set the electronic oven control for normal baking at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press **Cancel** keypad to end Bake mode.

- Temperature Adjustment**
- While in a non-cooking mode, press and hold the **Bake** key pad for 6 seconds.
 - The current calibration offset (temperature adjustment) should appear in the temperature display.
 - Use the number key pads (0-9) to enter the desired amount of adjustment (up to 35°F).
 - Press the **self clean** key pad to change the sign of the adjustment to a (-) if necessary. A positive adjustment will not display a sign.
 - Once the desired adjustment (-35° to 35° F) has been entered, press the **start** key pad to accept the change or the **Cancel** key pad to reject the change.

NOTE: Changing calibration affects all baking modes. The adjustments made will not change the self-cleaning temperature.

Electronic oven control (EOC) & jumper connection locations



EOC jumper connections



Resistance/Temperature Detector Scale	
RTD SCALE	
Temperature (°F)	Resistance (ohms)
32 ± 1.9	1000 ± 4.0
75 ± 2.5	1091 ± 5.3
250 ± 4.4	1453 ± 8.9
350 ± 6.4	1654 ± 13.9
450 ± 8.9	1852 ± 13.5
550 ± 8.2	2047 ± 15.8
650 ± 8.6	2237 ± 18.5
800 ± 13.6	2597 ± 24.4

TechSheet Abbreviations and Terminology
EOC = Electronic Oven Control
VSC = Variable Speed Control
PS = Power Supply board (PS1, PS2, etc.)
RTD = Resistance Temperature Device (Temp Probe or Temp Sensor)
TDO = Thermal Cut Out also "Thermo Disc" or "Thermal Limiter"

	EOC Modes: F10-F19 (Electro-Over)										Door Switch Contacts COM-NO	
	L1 to Bake	L1 to Broil	L1 to Conv Bake Fan	L1 to Conv Heating Element	L2 to L2 Out	L1 to Warming Drawer	L1 to Oven Lamps	L1 to				Open
Bake/Time Bake	X*	X*	X*	X*	X	X						
Broil	X*	X*	X	X	X	X						
Clear	X*	X*										
Unlabeled			X									
Locked												
Unlocked			X								X	O
Door Open											X	X
Door Closed												
Oven Lamps ON											X	
Warming Drawer						X*						

NOTE: X = Circuit Contacts Closed O = Circuit Contacts Open * = Alternates with Bake Element # = During Preheat # = 1 Cycle on No Preheat

Electronic Oven Control Fault Code Descriptions

Fault Code	Likely failure condition/cause	Suggested Corrective Action
F10	Runaway temperature. Oven heats when no cook cycle is programmed.	If Oven is cold: 1. If fault code is present with cold oven test oven temperature sensor probe circuit resistance. Use RTD scale found in the tech sheet. 2. Replace probe or repair wiring connections if defective. 3. If temperature sensor probe circuit is good but fault code remains when oven is cold replace the EOC. If Oven is overheating: 1. If oven is severely overheating/heating when no cook cycle is programmed test oven temperature sensor probe circuit resistance using the RTD scale found in the service tech sheet. Also verify that the temperature sensor probe is properly installed in the oven cavity. 2. Disconnect power from the range, wait 30 seconds and reapply power. If oven continues to heat when the power is reappplied, replace the EOC. NOTE: Severe overheating may require the entire oven to be replaced should damage be extensive.
F11	Stalled keypad or selector switch.	1. Reset power supply to range. Disconnect power, wait 30 seconds and reapply power. 2. Check/replace ribbon harness connections between touch panel and EOC. 3. Test keypad circuits using test matrix (below). Replace touch panel if defective. 4. If keypad circuits check good replace the EOC.
F12	EOC Internal software error or failure.	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
F14	Keypad tab failure.	1. Check/replace ribbon harness connections between keypad touch panel and EOC. 2. Test keypad circuits using test matrix (below). Replace touch panel if defective. 3. If keypad circuits check good replace EOC.
F15	EOC Internal hardware error or failure.	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
F30	Open oven sensor probe circuit.	1. (F30) Check resistance at room temperature & compare to RTD Sensor resistance chart. If resistance is correct replace the EOC. If resistance does not match the RTD chart replace RTD Sensor Probe. Check Sensor wiring harness between EOC & Sensor Probe connection.
F31	Shorted oven sensor probe circuit.	2. (F31) Check resistance at room temperature, if less than 500 ohms, replace RTD Sensor Probe. Check for shorted Sensor Probe harness between EOC & Probe connector. If resistance is correct replace the EOC.
F42	EOC Internal software configuration error.	Usually this failure code would only appear if the EOC has been replaced with an incorrect version. Verify that the correct replacement part number is being used.
F60	EOC oven temperature higher than normal temperature detected on the EOC board.	1. Verify proper assembly of backguard panel. Check for damaged or loose panels, brackets, endcaps, etc. 2. Check for blocked ventilation slots in control panel rear cover. 3. Inspect oven vent for proper assembly and air flow. 4. Verify operation of cooling fan (if present).
F62	Internal signal voltage error. Display communication error.	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
F64	Time Base Failure. The EOC cannot determine if controlled to 50 or 60Hz power supply.	Confirm that range is connected to proper power source (50Hz or 60Hz). Generators or other portable power supplies and solar grids, etc. may not provide proper power supply. If power source is correct replace the EOC.
F65	Keypad short circuit or internal EOC failure.	1. Test keypad circuits using test matrix. Replace touch panel if defective. 2. If keypad circuits check good replace the EOC.
F66	EOC Internal power supply failure.	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
F68	High voltage condition. L1 or L2 may be crossed with Neutral on incoming PS.	1. Verify proper incoming line voltage and polarity of L1, L2 and Neutral power supply connections at range terminal block. 2. If power supply voltage and polarity are correct replace EOC.
F69	Door lock motor or latch circuit failure.	If lock motor runs: 1. Test continuity of wiring between EOC and lock switch on lock motor assembly. Repair if needed. 2. Advance motor until cam depresses the plunger on lock motor switch. Test continuity of switch contacts. If switch is open replace lock motor assembly. 3. If motor runs and switch contacts and wiring harness test good, replace the EOC. If lock motor does not run: 1. Test continuity of lock motor windings. Replace lock motor assembly if windings are open. 2. Test lock motor operation by using a test cord to apply voltage. If motor does not operate replace lock motor assembly. 3. If motor runs with test cord continuity of wire harness to lock motor terminals. If harness is good replace the EOC.

Keypad Test Matrix

CONNECTOR	PS1-1	PS1-2	PS1-3	PS1-4	PS1-5	PS1-6	PS1-7	PS1-8	PS1-9	PS1-10	PS1-11	PS1-12	PS1-13	PS1-14	PS1-15	PS1-16	PS1-17	
F10-2	CLOCK	COOK	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6
F10-3	PREHEAT	PREHEAT	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6
F10-4	SLOW COOK	BROIL	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6
F10-5	WARM	WARM	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6
F10-6	WARM	WARM	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6
F10-7	STOP/CLEAN	WIP	FLX	FLX	CONV	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM
F10-8	WIP	FLX	FLX	CONV	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM
F10-9	WIP	FLX	FLX	CONV	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM
F10-10	WIP	FLX	FLX	CONV	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM
F10-11	WIP	FLX	FLX	CONV	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM
F10-12	WIP	FLX	FLX	CONV	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM
F10-13	WIP	FLX	FLX	CONV	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM
F10-14	WIP	FLX	FLX	CONV	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM
F10-15	WIP	FLX	FLX	CONV	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM
F10-16	WIP	FLX	FLX	CONV	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM
F10-17	WIP	FLX	FLX	CONV	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM	WARM

View control membrane overlay from front. To test keypad function check for continuity between indicated pin locations while pressing keypad. Example: To test the Bake keypad use pin P2 & pin P10 on connector P31. To test broiling keypad use pin P1 on connector P1 & pin P10 on connector P31.

IMPORTANT
DO NOT REMOVE THIS BAG OR DESTROY THE CONTENTS
WIRING DIAGRAMS AND SERVICE INFORMATION ENCLOSED
REPLACE CONTENTS IN BAG

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Manual abstract:

The manufacturer cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet. Safe servicing practices To avoid the possibility of personal injury and/or property damage, it is important that safe servicing practices be observed. 1. 2. 3. Never interfere with the proper installation of any safety device. Ground leads are not to be used as current carrying conductors. It is extremely important that the service technician reestablish all safety grounds prior to completion of service. Failure to do so will create a potential safety hazard. Prior to returning the product to service, ensure that:

· All electrical connections are correct and secure.
· All electrical leads are properly dressed and secured away from sharp edges, hightemperature components, and moving parts.
· All uninsulated electrical terminals, connectors, heaters, etc. are adequately spaced away from all metal parts and panels.
· All safety grounds (both internal and external) are correctly and securely reassembled. Oven Calibration Set the electronic oven control for normal baking at 350°F.

Obtain an average oven temperature after a minimum of 5 cycles. Press cancel keypad to end Bake mode. Temperature Adjustment 1. While in a non-cooking mode, press and hold the bake key pad for 6 seconds. 2.

The current calibration offset (temperature adjustment) should appear in the temperature display. 3. Use the number key pads (0-9) to enter the desired amount of adjustment (up to 35°F). 4. Press the self clean key pad to change the sign of the adjustment to a (-) if necessary. A positive adjustment will not display a sign. 5. Once the desired adjustment (-35° to 35° F) has been entered, press the start key pad to accept the change or the cancel key pad to reject the change. NOTE: Changing calibration affects all Baking modes. Use RTD scale found in the tech sheet.

2. Replace probe or repair wiring connections if defective. 3. If Oven is overheating: 1. 2. Disconnect power from the range, wait 30 seconds and reapply power. 1. 2. 3. 4.

Check/reseat ribbon harness connections between touch panel and EOC. Test keyboard circuits using test matrix. Replace touch panel if defective.

If fault returns upon power-up, replace EOC. 1.

2. Test keyboard circuits using test matrix (below). Replace touch panel if defective. 3. If keyboard circuits check good replace EOC.

Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC. 1. If resistance is correct replace the EOC. If resistance does not match the RTD chart replace RTD Sensor Probe. Check Sensor wiring harness between EOC & Sensor Probe connector. 2. If resistance is correct replace the EOC. 3. Verify that the correct replacement part number is being used. 1.

2. 3. 4. Verify proper assembly of backguard panel. Check for damaged or loose panels, brackets, endcaps, etc. Check for blocked ventilation slots in control panel rear cover. Inspect oven vent for proper assembly and air flow. Verify operation of cooling fan (if present). 4. Electronic oven control (EOC) & jumper connection locations F15 F19 F30 EOC Internal hardware error of failure.

Open oven sensor probe circuit. Shorted oven sensor probe circuit. EOC internal software configuration error. EOC oven temperature. Higher than normal temperature detected on the EOC board.

Internal signal voltage error. Display communication error. Time Base failure - The EOC cannot determine if connected to 50 or 60Hz power supply.

Keyboard short circuit or internal EOC failure. EOC internal power supply failure.

High voltage condition. L1 or L2 may be crossed with Neutral on incoming PS. Door lock motor or latch circuit failure. P1 P31 P29 F31 F42 F60 P30 P3 P4 P5 P6 P7 P8 P9 P10 P12 P13 P14 P16 P18 P19 P20 P23 P24 P25 P26 P27 P28 P2 EOC jumper connections F62 F63 F64 Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC. Confirm that range is connected to proper power source (50Hz or 60Hz).

Generators or other portable power supplies and solar grids, etc. may not provide proper power supply. If power source is correct replace the EOC. F65 P2 P10 P29 P30 1.

Test keyboard circuits using test matrix. Replace touch panel if defective. 2. If keyboard circuits check good replace the EOC Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC. 1. Verify proper incoming line voltage and polarity of L1, L2 and Neutral power supply connections at range terminal block. 2. If power supply voltage and polarity are correct replace EOC. If lock motor runs: 1.

Test continuity of wiring between EOC and lock switch on lock motor assy. Repair if needed. 2. Advance motor until cam depresses the plunger on lock motor switch. Test continuity of switch contacts.

If switch is open replace lock motor assembly. 3. If motor runs and switch contacts and wiring harness test good, replace the EOC. If lock motor does not run: 1. Test continuity of lock motor windings.

Replace lock motor assembly if windings are open. 2. Test lock motor operation by using a test cord to apply voltage. If motor does not operate replace lock motor assy. 3. Example: To test the Bake keypad use pin #2 & pin #10 on connector P31. To test cooktop keypad use pin 1 on connector P1 & pin 9 on connector P31. General Troubleshooting Diagram General Troubleshooting Schematic .



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